

IN THE CLAIMS:

1. (Previously Presented) An isolated polynucleotide encoding the $\sigma_{1\beta}$ receptor, said polynucleotide selected from the group consisting of:

- (a) polynucleotides comprising the nucleotide sequence of SEQ ID NO:1;
- (b) polynucleotides which encode the amino acid sequence SEQ ID NO: 2; and
- (c) polynucleotides that have at least 95% homology to isolated polynucleotides of (a) or (b) above and that encode a $\sigma_{1\beta}$ receptor exhibiting σ_2 activity.

2-3. (Cancelled).

4. (Previously Presented) An isolated polynucleotide according to Claim 1 which is a DNA comprising the nucleotide sequence given herein as SEQ ID NO:1.

5. (Previously Presented) An expression vector comprising a polynucleotide according to Claim 1.

6. (Original) A cell comprising an expression vector according to Claim 5.

7. (Original) A cell comprising an expression vector according to Claim 6 and capable of expressing $\sigma_{1\beta}$.

8-10. (Canceled)

11. (Currently Amended) A method for producing a protein comprising the amino acid sequence of SEQ ID NO:2, ~~or a fragment thereof~~, comprising

- (a) culturing a host cell comprising an expression vector comprising at least a fragment of the polynucleotide sequence of SEQ ID NO:1 encoding a $\sigma_{1\beta}$ receptor under conditions suitable for the expression of the protein; and
- (b) recovering the protein from the host cell culture.

12-32. (Canceled).

33. (Previously Presented) A transformed host cell comprising the polynucleotide of Claim 1.

34. (Canceled).

35. (New) A method for determining the proliferative status of a tumor that comprises cells that express $\sigma_{1\beta}$ receptors, comprising:

- (a) contacting the cells with a detectably labeled $\sigma_{1\beta}$ ligand, and
- (b) determining the extent to which the ligand binds to the cells, wherein the extent of binding provides a measure of the proliferative status of the tumor.

36. (New) An isolated polynucleotide comprising the nucleotide sequence of SEQ ID NO:1.

37. (New) An isolated polynucleotide which encodes for the amino acid sequence SEQ ID NO: 2.